This historic book may have numerous typos and missing text. Purchasers can download a free scanned copy of the original book (without typos) from the publisher. Not indexed. Not illustrated. 1900 Excerpt: ...half wave-length, so that these points each indicate the end of a quarter wave-length. And, indeed, on the basis of this assumption and of the fundamental view just expressed, we shall arrive at a complete explanation of the phenomenon. For let us suppose that a vertical wave of electric force proceeds towards the wall, is reflected with slightly diminished intensity, and so gives rise to stationary waves. If the wall were a perfect conductor a node would form at its very surface. For inside a conductor or at its boundary the electric force must always be vanishingly small. Now our wall cannot be regarded as a perfect conductor. For, in the first place, it is only metallic in part, and the part which is metallic is not very extensive. Hence at its surface the force will still have a certain value, and this in the sense of the advancing wave. The node, which would be formed at the wall itself if it were perfectly conducting, must therefore lie really somewhat behind the surface of the wall, say at the point A in the figure. If double the distance A B, that is the distance A C, corresponds to the half wave-length, then the geometrical relations of the stationary wave are of the kind which are represented in the usual symbolic fashion by the continuous wave-line in the figure. The forces acting on both sides of the circle in the positions 2, II, III, and IV are correctly represented for any given instant in magnitude and direction by the arrows at the sides. If, then, in the neighbourhood of a node the spark-gap is turned towards the node, we have in the circle a stronger force acting under favourable conditions against a weaker force, which acts under unfavourable conditions. But if the spark-gap is turned away from the node, the stronger force now acts under...